

REMARKS

Introduction

Claims 1, 5 and 8-18 are pending in this application. Claims 11-13 are withdrawn. Claims 2-4 and 6-7 have been cancelled without prejudice or disclaimer of the subject matter thereof. Claims 15, 16 and 18 have been amended to correct informalities in claim language and to more clearly define the present subject matter. No new matter has been introduced.

Claim Rejection – 35 U.S.C. § 103

Claims 1-10 and 14-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over R &D Kobe Steel Technical Report (“Publication 1”) in view of Hiroshi Suzuki, ed., Plastic Processing (“Publication 2”) and further in view of the computer-generated English translation of Japanese Patent 2003-213372 (“JP ‘372”). Applicants respectfully traverse this rejection for at least the following reasons.

The Examiner asserts that Table 1 of Publication 1 discloses a spring steel containing C: 0.59%, Si: 1.93%, Mn: 0.85%, Cr: 0.91%, Ni: 0.25% and V: 0.10% and that JP-372 discloses that a spring steel wire contains C: 0.50-0.90%, Si: 1.0-3.0%, Mn: 0.5-1.5% and Cr: 0.1-5.0% and optionally may further contain at least one of Mo: 0.05-0.50%, V: 0.05-0.50%, W: 0.05-0.15%, Nb: 0.05-0.15%, Ti: 0.01-0.20%, Ni: 0.02-1.00%, Co: 0.02-1.00% and Cu: 0.02-1.00%. The Examiner further asserts that the composition of the present subject matter defines conventionally known steel compositions and it would be within the skill of the artisan to modify the teaching of Publication 1 by using slightly different, but analogous materials known in the art. Applicants disagree.

Applicants respectfully submit that it would not have been obvious to make a steel wire

to have a high silicon content (Si: 1.8% or higher) and low manganese content (Mn: 0.7% or lower). JP-372 appears to disclose Si and Mn contents of 1.0-3.0% and 0.5-1.5%, based on mass %, respectively. However, at the time of the effective filing date of the present application, it was common technical knowledge for the artisan that it is better to increase the Mn content along with an increase in Si content. This is also evidenced from the steel composition of Publication 1 (Si: 1.93%, Mn: 0.85%), and the steel compositions shown in Table 1 of JP-372 (Sample Steel B; Si: 1.94% and Mn: 0.75%, Sample Steel C; Si: 1.85% and Mn: 0.85%). Accordingly, it would not have been obvious to modify the Si and Mn contents of the steel wires in the cited references to arrive at the claimed high silicon content (Si: 1.8-2.70%) and low manganese content (Mn: 0.1-0.7%). Furthermore, it was unknown, at the time of the effective filing date, that a steel wire having high Si and low Mn contents would have a mechanical property nearly equal to that of conventionally known steel wires having high Si and high Mn contents.

Based on the foregoing, Applicants respectfully submit that none of the cited references, taken alone or in any combination thereof, renders claim 1 or any claim dependent thereon obvious. Thus, it is requested that the Examiner withdraw the rejection of claims 1, 5, 8-10 and 14-18 under 35 U.S.C. § 103(a).

Conclusion

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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